

ABSTRACT

According to the invention, a laser and a method of operating a laser which can produce multiple pulses from a single laser head is provided. A lasing medium is pumped by pumping source such as laser diodes, lamp and such. A modulator located in the cavity is turned on to induce a loss in the laser cavity sufficient to prevent lasing. A first predetermined amount of energy is stored in the lasing medium while the modulator is turned on due to a creation of a population inversion in the lasing medium in excess of the lasing threshold. The modulator is then turned off for a period of time to allow the lasing medium to provide a first pulse. The modulator is then turned on before the population inversion in the laser medium is depleted completely so that a predetermined amount of energy remains stored in the lasing medium. After the first pulse, the modulator again induces a loss in the cavity sufficient to prevent lasing. The modulator is maintained in the on position for a period of time to increase the amount of energy stored in the lasing medium. The modulator is then turned off for a third period of time to allow the lasing medium to produce a second pulse having a second controlled amount of pulse energy.